We claim:

1. A contrast agent comprising stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable gas selected from the group consisting of freons, halogenated hydrocarbons, and fluorinated gases, said stabilized microbubbles being stabilized, at least in part, by a surfactant.

2. A contrast agent comprising stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable gas that is a freon, said stabilized microbubbles being stabilized, at least in part, by a surfactant.

3. The contrast agent of claim 1 wherein said stabilized microbubbles are suspended in a carrier.

4. The contrast agent of claim 1 wherein said stabilized microbubbles are suspended in an aqueous liquid carrier.

5. The contrast agent of claim 1 wherein said stabilized microbubbles are between 0.5 and 10 microns in size.

6. The contrast agent of claim 1 wherein the stabilized microbubbles are sufficiently stable and resistant to pressure changes that they survive in the bloodstream long enough that they may be peripherally intravenously injected, travel through the right heart, through the lungs, and into the left heart without substantially dissolving.

7. The contrast agent of claim 1 wherein the physiologically acceptable freon is selected from the group consisting of CF_4, $CBrF_3$, C_4F_8, $CClF_3$, C_2F_6, C_3F_8, C_4F_6, C_2ClF_5, $CBrClF_2$, $C_2Cl_2F_4$, C_5F_{10}, C_5F_{12}, and C_4F_{10}.

8. The contrast agent of claim 1 wherein the physiologically acceptable fluorinated gas is selected from the group consisting of SF_6, SeF_6, CF_4, $CBrF_3$, C_4F_8, $CClF_3$, C_2F_6, C_3F_8, C_4F_6, C_2ClF_5, $CBrClF_2$, $C_2Cl_2F_4$, C_5F_{10}, C_5F_{12}, and C_4F_{10}.

9. The contrast agent of claim 2 wherein the physiologically acceptable freon is selected from the group consisting of CF_4, $CBrF_3$, C_4F_8, $CClF_3$, C_2F_6, C_3F_8, C_4F_6, C_2ClF_5, $CBrClF_2$, $C_2Cl_2F_4$, C_5F_{10}, C_5F_{12}, and C_4F_{10}.

10. The contrast agent of claim 2 wherein the physiologically acceptable freon is selected from the group consisting of CF_4, C_4F_8, C_2F_6, C_3F_8, C_4F_6, C_5F_{10}, C_5F_{12}, and C_4F_{10}.

11. The contrast agent of claim 1 wherein the physiologically acceptable freon is selected from the group consisting of CF_4, C_2F_6, C_3F_8, C_4F_6, C_4F_8, C_5F_{10}, C_5F_{12}, and C_4F_{10}.

12. The contrast agent of claim 1 wherein the physiologically acceptable fluorinated gas comprises SF_6.

13. The contrast agent of claim 1 wherein the physiologically acceptble fluorinated gas comprises SeF_6.

14. The contrast agent of claim 1 wherein the physiologically acceptable freon comprises CF_4.

15. The contrast agent of claim 1 wherein the physiologically acceptable freon comprises $CBrF_3$.

16. The contrast agent of claim 1 wherein the physiologically acceptable freon comprises C_4F_8.

17. The contrast agent of claim 1 wherein the physiologically acceptable freon comprises $CClF_3$.

18. The contrast agent of claim 1 wherein the physiologically acceptable freon comprises C_2F_6.

19. The contrast agent of claim 1 wherein the physiologically acceptable freon comprises C_2ClF_5.

20. The contrast agent of claim 1 wherein the physiologically acceptable freon comprises $CBrClF_2$.

21. The contrast agent of claim 1 wherein the physiologically acceptable freon comprises $C_2Cl_2F_4$.

22. The contrast agent of claim 1 wherein the physiologically acceptable freon comprises C_4F_{10}.

23. The contrast agent of claim 1 wherein the physiologicaly acceptable freon comprises C_3F_8.

24. The contrast agent of claim 1 wherein the physiologicaly acceptable freon comprises C_2F_6.

25. The contrast agent of claim 1 wherein the physiologicaly acceptable freon comprises C_5F_{10}.

26. The contrast agent of claim 1 wherein the physiologicaly acceptable freon comprises C_5F_{12}.